REMARKS

In the Office Action, the Examiner objected to claim 35 for containing informalities. The Examiner rejected claims 27, 28, 32-34, and 38-40 under § 103 as being unpatentable over USP 6,295,634 issued to Matsumoto (Matsumoto) in view of USP 5,587,923 issued to Wang (Wang). The Examiner also rejected claims 29-31 and 35-37 for their dependence upon a rejected base claim. However, the Examiner found claims 29-31 and 35-37 otherwise allowable. In this amendment, Applicants have amended claims 27 and 33. Applicants have also re-written allowed claims 29 and 35 into independent claims. Applicants have also canceled claims 39 and 40. Accordingly, claims 27-38 will be pending after entry of this Proposed Amendment.

I. Interview

Applicants respectfully thank the Examiner for the personal interview on August 13, 2004. During the personal interview, no exhibit was shown or demonstration conducted. Applicants' representative discussed the independent claims and the cited references with the Examiner. Pursuant to the agreement reached with the Examiner, Applicants have amended the independent claims 27 and 33 to include the limitations mentioned in the Interview Summary.

II. Informalities in Claim 35

The Examiner objected to claim 35 for omitting the term "potential" before "routes." Applicants have amended claim 35 to include the term "potential" before "routes."

III. Rejection of Claims 27, 28, and 32

The Examiner rejected claims 27, 28, and 32 under § 103 as being unpatentable over Matsumoto in view of Wang. Applicants respectfully traverse this rejection.

Claims 28 and 32 are dependent directly on independent claim 27. Claim 27 recites a method of pre-computing attributes of routes for nets in a region for an electronic design

automation application that partitions a region of a design layout into a several sub-regions. Several edges exist between the sub-regions. This method identifies a first set of potential routes for a first set of sub-regions. Each sub-region of the first set includes a contact point. Each route in the first set of potential routes traverses the first set of sub-regions through the contact point of each sub-region of the first set. The method identifies, for each particular edge, an edge-intersect cost that is dependent on the number of routes in the first set of potential routes that intersect the particular edge. The method stores the identified edge-intersect costs for the first set of sub-regions.

Applicants respectfully submit that the cited references neither separately nor in combination disclose, teach, nor even suggest such a method. The Examiner identifies Figures 7 and 18 of Matsumoto as disclosing the identification of a first set of potential routes limitation of claim 27. However, Matsumoto fails to disclose that these potential routes traverse the set of sub-regions through the contact point of each sub-region in the set. In fact, Matsumoto teaches away from this limitation of claim 27 by disclosing potential routes that traverse a set of sub-regions through the edges in between the contact points of these sub-regions. Therefore, Matsumoto does not disclose, teach or even suggest the recited method of claim 27 that:

- for a first set of sub-regions where each sub-region of the first set includes a contact point, identifying a first set of potential routes,
- and each route in the first set of potential routes traverses the first set of sub-regions through the contact point of each sub-region of the first set.

Accordingly, Applicants respectfully submit that the cited references do not render claim 27 unpatentable. As claims 28 and 32 are dependent on claim 28, Applicants respectfully submit that claims 28 and 32 are patentable over the cited references for at least the same reasons as

claim 27. In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the § 103 rejection of claims 27, 28, and 32.

IV. Rejection of Claims 33, 34, and 38

The Examiner rejected claims 33, 34, and 38 under § 103 as being unpatentable over Matsumoto in view of Wang. Applicants respectfully traverse this rejection.

Claims 34 and 38 are dependent directly on independent claim 33. Claim 33 recites a method of pre-computing attributes of routes for nets in a region for an electronic design automation application that partitions a region of a design layout into a several sub-regions. Several paths exist between the sub-regions. This method identifies a first set of potential routes for a first set of sub-regions. Each sub-region of the first set includes a contact point. Each route in the first set of potential routes traverses the first set of sub-regions through the contact point of each sub-region of the first set. The method identifies, for each particular path, a path-use cost that is dependent on the number of routes in the first set of potential routes that use the particular path. The method stores the identified path-use costs for the first set of sub-regions.

Applicants respectfully submit that the cited references neither separately nor in combination disclose, teach, nor even suggest such a method. Specifically, Applicants respectfully submit that the cited references do not disclose a method that:

- for a first set of sub-regions where each sub-region of the first set includes a contact point, identifying a first set of potential routes, where each route in the first set of potential routes traverses the first set of sub-regions through the contact point of each sub-region of the first set;

- for each particular path, identifying a path-use cost that is dependent on the number of routes in the first set of potential routes that intersect the particular path; and
- storing the identified path-use costs for the first set of sub-regions.

The Examiner identifies Figures 7 and 18 of Matsumoto as disclosing the identification of a first set of potential routes limitation of claim 33. However, Matsumoto fails to disclose that these potential routes traverse the set of sub-regions through the contact point of each sub-region in the set. In fact, Matsumoto teaches away from this limitation of claim 33 by disclosing potential routes that traverse a set of sub-regions through the edges in between the contact points of these sub-regions. Therefore, Matsumoto does not disclose, teach or even suggest the recited method of claim 33 that:

- for a first set of sub-regions where each sub-region of the first set includes a contact point, identifying a first set of potential routes,
- and each route in the first set of potential routes traverses the first set of sub-regions through the contact point of each sub-region of the first set.

Accordingly, Applicants respectfully submit that the cited references do not render claim 33 unpatentable. As claims 34 and 38 are dependent on claim 33, Applicants respectfully submit that claims 34 and 38 are patentable over the cited references for at least the same reasons as claim 33. In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the § 103 rejection of claims 33, 34, and 38.

V. Allowable Claims

In the Office Action, the Examiner found that claims 29-31 and 35-37 contain allowable subject matter, but objected to these claims as being dependent upon a rejected base claim. The

Applicants thank the Examiner for allowing the subject matter of these claims. Claims 29 and 35 have been rewritten in independent form.

CONCLUSION

In view of the foregoing, it is submitted that all pending claims, namely claims 27-38, are in condition for allowance. Reconsideration of the rejections and objections is requested. Allowance is earnestly solicited at the earliest possible date.

Respectfully submitted,

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